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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/584,065

06/22/2006

Shinichiro Nishimura

2006_0977A

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07/28/2008

WENDEROTH, LIND & PONACK, L.L.P.

2033 K STREET N. W.

SUITE 800

WASHINGTON, DC 20006-1021

EXAMINER

BLAND, LAYLA D

ART UNIT

PAPER NUMBER

1623

MAIL DATE

DELIVERY MODE

07/28/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/584,065	Applicant(s) NISHIMURA ET AL.	
	Examiner LAYLA BLAND	Art Unit 1623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This office action is a response to Applicant's amendment submitted March 26, 2008, wherein claim 1 is canceled, claims 2-10 are amended, and new claims 11-14 are added. Claims 2-14 are pending and are examined on the merits herein.

In view of the cancellation of claim 1, all rejections made with respect to that claim in the previous office action are withdrawn.

In view of Applicant's amendment submitted March 26, 2008, the rejection of claim 5 under 35 USC 102(b) as being anticipated by Bolem, is withdrawn.

Claim Objections

Claims 2-14 are objected to because of the following informalities:
"trimethylsillyl" is a misspelling. Appropriate correction is required.

The following are new rejections:

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 3, 7, and 13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter

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which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims, as amended, recite "pentenyl." The specification as originally filed merely discloses that the specific "4-pentenyl" moiety species but fails to disclose "pentenyl" as broad genus, as noted in MPEP 2163, a broad genus is not necessarily described by a species which the genus is encompassing or a subgenus is not necessarily described by a genus encompassing it and a species upon which it reads, see *In re Smith*, 458 F.2d 1389, 1395, 173 USPQ 679, 683 (CCPA 1972). Thus, the specification provides support for "4-pentenyl" but not for all pentenyl moieties. This is new matter.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2, 11, 12, and 13 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. Claim 2, 11, and 12 are drawn to a "method for preparing a trisaccharide," but the method steps recited in the claims do not result in formation of a trisaccharide. The omitted steps are: those which are required to transform compounds I or II into the recited trisaccharide. Claim 13 is drawn to a method for preparing a trisaccharide which appears to be an unprotected trisaccharide,

but the method steps result in formation of a protected trisaccharide. The omitted steps are: deprotection.

Claims 2-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 2-14 include structures wherein -NO_2 is directly attached to the ring. The prior art suggests that analogous reactions result in installment of the -ONO_2 substituent. Clarification is requested.

Claims 4 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 4 recites the limitation "a protected asparagines derivative." Neither the claim nor the specification defines which modifications to asparagine (which derivatives) are intended to be encompassed by the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bolem et al. (Carbohydrate Research 312 (1998) 85-89, PTO-1449 submitted September 13, 2006) in view of Yamazaki et al. (Holzforschung (1979), 33(2), 36-42).

Bolem et al. teach D-mannobiose octaacetate obtained by acetylation of a mannose-mannobiose mixture, which was obtained from a mannanase digest of ivory nut mannan [page 86, last paragraph].

Yamazaki et al. teach that mannobiose can be produced from guar galactomannan using mannanase [page 36, Summary].

It would have been obvious to carry out the method of Bolem et al. using mannobiose obtained from guar galactomannan. Bolem obtains mannobiose from ivory nut mannan and Yamazaki teaches that mannobiose can also be obtained from guar galactomannan. Thus, the skilled artisan could practice the method of Bolem using mannobiose obtained from either source.

Claims 5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Usui et al. (Glycoconjugate Journal (1994) 11: 105-110, of record) in view of Yamazaki et al. (Holzforschung (1979), 33(2), 36-42).

Usui et al. teach the production of the common synthetic intermediate Man β 1-4GlcNAc β 1-4GlcNAc from mannobiose (Man β 1-4Man) [see abstract and Introduction].

Usui et al. do not teach a method of preparing mannobiose from guar gum or galactomannan of formula V.

Yamazaki et al. teach that mannobiose can be produced from guar galactomannan using mannanase [page 36, Summary].

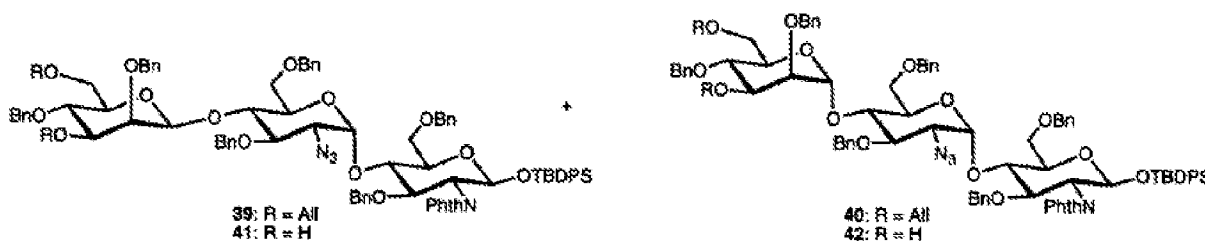
It would have been obvious to one of ordinary skill in the art at the time the invention was made to prepare Man β 1-4GlcNAc β 1-4GlcNAc using D-mannobiose

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obtained by the method of Yamakazi et al. Usui et al. teach that mannobiose can be used for the production of a useful synthetic intermediate and Yamakazi et al. teach a process of preparing the mannobiose. The skilled artisan could have combined the two references and predicted the success of such a combination based on the teachings of Usui et al. and Yamakazi et al.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takatani et al. (Glycoconjugate Journal 17, 361-375, 2000) in view of Greene et al. (Protective Groups in Organic Synthesis, Third Edition, 1999 John Wiley & Sons, Reactivity Chart 1, pages 708-711).

Takatani et al. teach the following compounds 39-42 [page 370]:



These compounds differ from the compounds of claim 8 in that they contain allyl and TBDPS protecting groups, which are not included in claim 8.

Greene et al. teaches that allyl ethers have similar reactivity to other hydroxy protecting groups, including methoxymethyl and tetrahydropyranyl [Reactivity Chart 1]. TBDPS groups also have similar reactivity to other hydroxyl protecting groups, including the tetrahydropyranyl group and TBDMS group [Reactivity chart 1]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to

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substitute protecting groups having similar reactivity for the ones taught by Takatani et al. The skilled artisan would expect protecting groups having similar reactivity to behave similarly, and would expect success with such a modification.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAYLA BLAND whose telephone number is (571)272-9572. The examiner can normally be reached on Tuesday - Friday, 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anna Jiang can be reached on (571) 272-0627. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Shaojia Anna Jiang, Ph.D./
Supervisory Patent Examiner, Art Unit 1623

/Layla Bland/
Examiner, Art Unit 1623